

Bridge Program Function and Performance Measures

The goal of the Bridge Program is to preserve the structural integrity of all bridges that the Department of Transportation and Engineering (DOTE) maintains. DOTE established the following performance measures to track progress towards accomplishing this objective.

1. Bridge Program personnel will annually inspect all bridges on, over, or under public streets within the City of Cincinnati (excluding Interstate Bridges) and submit this annual bridge condition report, in compliance with the Ohio Revised Code, Section 723.54.
2. Bridge Program personnel will develop, request funding, program, and manage bridge maintenance, repair, and replacement work so as to maintain a Weighted Average Bridge Rating of 6 or better for bridges maintained by the Department of Transportation and Engineering. (A bridge rating of 6 represents a "Satisfactory" condition.)

Both of these performance measures were achieved again this year. During the 2005/2006 bridge inspection season, DOTE personnel (or in the case of two Ft. Washington Way bridges, ODOT personnel) inspected all **289** bridges requiring inspection. The City (DOTE) Bridges weighted average is 7.11 and the County Bridges weighted average is 6.47.

What is a "Weighted Average Bridge Rating"?

The Weighted Average Bridge Rating is a calculated value used to monitor the performance and communicate the effectiveness of the Bridge Program. The Weighted Average Bridge Rating is an adjusted average of the overall bridge condition ratings that accounts for the importance of the bridge as determined by its size. The weighted average is calculated using a size factor multiplier based on the deck area of the bridge as follows:

Size Factor Multiplier	Deck Area (Square Feet)
1	under 5,000
2	5,000 to 10,000
3	10,000 to 20,000
4	20,000 to 40,000
5	over 40,000

By using the size factor, a bridge with a deck area of over 40,000 square feet will have five times the effect on the weighted average than a bridge with a deck area of under 5,000 square feet. Therefore, the Weighted Average Bridge Rating will be affected more by larger bridges, which are typically more vital to the public and require more funds for maintenance, repair, and replacement.

Bridge Conditions

The individual bridge ratings for all 69 City (DOTE) bridges and all 67 County bridges are shown elsewhere on this site. A summary of the bridge ratings for all 289 inspected bridges is shown in tabular form elsewhere, as well. The Weighted Average Bridge Rating for both City (DOTE) bridges and County bridges from 1987 to 2005 is shown graphically.

As indicated on the graph, the condition of both City (DOTE) bridges and County bridges has shown general improvement over the last eighteen years. The current weighted average bridge rating for City (DOTE) bridges is 7.11. This is the fourteenth consecutive year that the Weighted Average Bridge Rating for City (DOTE) bridges was greater than 6. The current Weighted Average Bridge Rating for County bridges within the city limits is 6.47. This is the thirteenth consecutive year that the Weighted Average Bridge Rating for County bridges was greater than 6. (A bridge rating of 6 represents a "Satisfactory" condition.)

Change in Average Bridge Conditions Over the Past Year

The change in the City (DOTE) bridge rating that occurred this year (from a weighted average of 7.18 to 7.11) was the cumulative result of the following six changes:

- 1) The condition rating of the Brighton Approach Bridge over Central Parkway was lowered from a rating of 7 (good condition) to a rating of 6 (satisfactory condition) due to general age-related deterioration.
- 2) The condition rating of the Celestial Street Pedestrian Bridge over Columbia Parkway was raised from a rating of 6 (satisfactory condition) to a rating of 8 (very good condition) due to repairs made to the bridge as part of the Columbia Parkway Bridge West of Martin Drive bridge replacement project.
- 3) The condition rating on the Elm Street Bridge over Pete Rose Way and Parking Lots was lowered from a rating of 9 (as-built condition) to a rating of 8 (very good condition) due to cracking and spalling of the deck (slab).
- 4) The Elmhurst Avenue Pedestrian Bridge was lowered from a rating of 6 (satisfactory condition) to a rating of 5 (fair condition) due to cracking and delaminations of the concrete that makes up the beam/slab.
- 5) The Power Street Bridge over the West Fork Channel was lowered from a rating of 9 (as-built condition) to a rating of 8 (very good condition) due to cracking in the concrete slab.
- 6) The Railroad (Abandoned) Bridge over I-71 North of Elsinore was added to the City (DOTE) bridge list as a result of an agreement with ODOT.

The change in the County Bridge rating that occurred this year (from a weighted average of 6.53 to 6.47) was the cumulative result of the following two changes:

- 1) The condition rating of the River Road and Hillside Avenue Culvert at Bender was lowered from a rating of 9 (as-built condition) to a rating of 8 (very good condition) due to spalling of the precast concrete segments.
- 2) The condition rating of the eastbound Sixth Street Expressway Bridge over Private Drive West of Freeman was lowered from a rating of 7 (good condition) to a rating of 4 (poor condition) due to the appearance of fatigue cracks at some weld locations. ODOT arranged for the ends of the cracks to be drilled out to prevent the cracks from propagating. Permanent repairs or superstructure replacement will be performed on a future contract.